MISSISSIPPI STATE UNIVERSITY

JAMES C. KENNEDY

endowed chair in waterfowl and wetlands conservation

2013 ANNUAL REPORT

College of Forest Resources | Forest and Wildlife Research Center

FROM THE CHAIR

The culmination of another calendar year and annual cycle of North American waterfowl are approaching as the birds migrate to their wintering grounds. Indeed, this year was one to celebrate for faculty and student affiliates of the James C. Kennedy Endowed Chair in Waterfowl and Wetlands Conservation at Mississippi State University. Here are the celebratory highlights.

As you may recall from the 2012 annual report, we hosted the 6th North American Duck Symposium (NADS 6), "Ecology and Conservation of North American Waterfowl" symposium in Memphis, Tennessee at the Peabody Hotel in January 2013. It was an outstanding success as more than 450 conferees attended the symposium from across North America and Europe. Conferees provided over 300 presentations during the week-long, first-ever "all waterfowl" duck symposium. Additionally, we surveyed all conferees after the symposium to seek their opinions on content and other aspects of the symposium. We prepared a manuscript from the survey results, which is included in this annual report as a feature article. We are working with authors of over 20 manuscripts from plenary and special sessions to produce the proceedings from the symposium entitled, "Ecology and Conservation of Northern Hemispheric Waterfowl." The proceedings will be printed and available on-line as a special issue of the journal, *Wildfowl*, published by Wildfowl and Wetlands Trust of the United Kingdom. Mark your calendars for NADS 7, which will convene for the first time in the

Atlantic Flyway in Annapolis, Maryland in February 2016.

Four MSU "Team Duck" graduate students are completing requirements for their Master's degrees in 2013. They are Pennsylvania native Jim Feaga, Michigan native Joe Lancaster, Wisconsin native Joe Marty, and Matt Weegman of Minnesota. Jim is working as a wetland biologist for an environmental consulting company in Pennsylvania while Matt is employed as a wetland biologist for Ducks Unlimited Inc. in Minnesota. Both young men have returned to their home states to 'fledge' their professional careers. Joe Lancaster and Joe Marty are remaining at MSU to earn their doctoral degrees, continuing research from their Master's degree. Six graduate students are working on their M.S. or Ph.D. degrees. Abstracts of all the students' research are presented in this report to provide updates on progress of their respective studies.

Besides celebrating graduation of several of our graduate students and their employment, students and faculty of the Kennedy Chair were honored by receiving awards or scholarships. You can read about these award recipients later in this annual report.

Another point of pride and significant reason to express sincere gratitude to Mr. and Mrs. Jim Kennedy was their second gift of land to Mississippi State University's College of Forest Resources. We are forever indebted to the Kennedys' belief in our efforts and generosity for waterfowl and wetlands science and conservation. This newest gift of land will enable completion of the Carsie Clark and Diane Worthington Young Wetland Education Theater at MSU (www.wet.msstate.edu) and will greatly increase the endowment for the James C. Kennedy Chair in Waterfowl and Wetlands Conservation. Establishment of the Kennedy Chair at MSU sustains the waterfowl and wetlands teaching, research, and outreach program in perpetuity at a critical time, when such programs at other universities in North America are vanishing (see related feature story in this report).

Indeed, we celebrate 2013 but we will never become complacent. We look forward to a productive 2014, as several current students will graduate, become employed, and further extend our contributions for waterfowl and wetlands science and conservation across the continent. Our mission, "science and stewardship for waterfowl and wetlands," will never waver! We trust your waterfowl hunting season was rewarding and wish you a healthful and productive 2014.

Sincerely,

Richard M. Kaminski, Ph.D.

Professor of Wildlife Ecology and Management
James C. Kennedy Endowed Chair in Waterfowl and Wetlands Conservation
Fellow, The Wildlife Society

Cover Photo

Mr. James C. Kennedy displays a "double-reward" banded male mallard recovered at his conservation area, York Woods, near Charleston, Mississippi. Biologists apply two bands to samples of ducks. One of the two bands is a "reward" band providing a financial incentive to hunters who report the number on the band to the U.S. Fish and Wildlife Service (FWS). The FWS uses band reporting data to improve estimates of duck survival and mortality for population management. Recovery of a double-reward banded duck is rare and consequently unique for most hunters.

An Endangered Academic Niche? University-based Waterfowl Programs in the U.S. and Canada

By: Richard M. Kaminski, Ph.D., is Professor of Wildlife Ecology and Management and James C. Kennedy Endowed Chair in Waterfowl and Wetlands Conservation in the Department of Wildlife, Fisheries and Aquaculture at Mississippi State University. (printed in the Wildlife Professional, December)

Waterfowl and their habitats are sustained significantly through efforts of well-trained professionals dedicated to their conservation. However, North American waterfowl could be in jeopardy if universities decrease or, worse yet, discontinue training specialists in waterfowl and their habitats. This potential threat is looming, given the continuing decline in university-based waterfowl programs in the United States and Canada and aging professors in this discipline.

This decline has been observed and studied for over a decade. In 2000, a mail survey of administrators of 76 biological science or natural resources departments in U.S. and Canadian universities was conducted to assess the then-current and potential future staffing of their programs in waterfowl ecology and management, publishing the results in the Wildlife Society Bulletin in 2002. As a follow-up survey in summer 2013, the websites of the same 76 universities plus two additional schools not surveyed in 2000—the University of Quebec-Rimouski and the University of Hawaii—were surveyed to update data collected in 2000 and determine age of faculty in waterfowl programs. Age data were then used to re-compute mean age of current faculty leading waterfowl programs and compared to data collected in 2000.

The results indicate a continuing downward trend in the number of faculty and programs dedicated to waterfowl science and management, with an aging group of professors that may breach the employment “pipeline” for waterfowl scientists and managers between universities and employers. As a waterfowl ecologist, conservationist, and educator, there is a deep concern about this trend and how it may impact waterfowl science and conservation in North America in the 21st century.

What the Numbers Show

In the 2000 survey (which had a significant 93 percent response rate), 65 percent of respondents reported their university had at least one faculty member who taught or directed research in waterfowl ecology and management. This statistic was good news—that the majority of universities surveyed still had waterfowl programs at the turn of the century.

However, between 2000 and 2013, the number of universities with waterfowl programs in the U.S. and Canada declined to 44 percent, about a 20 percent reduction. In 2013, 29 (48 percent) of 61 U.S. institutions had waterfowl-related research or teaching activities ongoing compared to five (29 percent) of 17 Canadian universities. A total of 35 faculty members studying waterfowl remain at universities in both countries. Eighty-three percent of them are headquartered at U.S. institutions (Table 1).

Most (37 percent) of the 35 faculty members in the U.S. and Canada were employed by universities within the Mississippi Flyway (i.e., 12 and 1 in the U.S. and Canada, respectively). In 2000, the percentage of waterfowl faculty in this flyway was slightly lower (32 percent). In descending order and comparatively between 2000 and 2013, percentages for Central (C), Atlantic (A), and Pacific (P) Flyways were: C (32 percent vs. 26 percent), A (16 percent vs. 20 percent), and P (20 percent vs. 17 percent). Thus, the percentage of faculty members engaged with waterfowl increased in the Mississippi and Atlantic flyways but declined in the Central and Pacific flyways between 2000 and 2013.

Mean age of the 35 faculty was 51 years, but ages of these faculty ranged from 32-69 years. Canadian faculty members were six years senior, on average, to U.S. colleagues. Only one Canadian colleague was within the 40-50 year category, and none was younger than 40 years; whereas, 16 U.S. faculty members were 32-50 years of age. All faculty were Caucasian in 2000 and 2013 and nearly all were male in 2000 (96 percent) and 2013 (94 percent).

These results illustrate a continuing decline in numbers of programs and faculty engaged in waterfowl research or teaching at U.S. and Canada universities despite the importance of waterfowl continentally. Although there has been some recruitment of waterfowl faculty and continuation of waterfowl positions—particularly at U.S. universities following death, departure, or retirement of faculty members—it appears that 15 positions have not been re-filled with waterfowl experts (Table 1). Moreover, recent conversations with senior colleagues in remaining positions reveal uncertainty or unlikelihood whether their positions will be filled with waterfowl specialists after their departure.

The 2000 survey suggested a possible waning of waterfowl ecologists in North American universities. Based on results from the 2013 survey, a further decline and endangerment of university-based waterfowl programs seem imminent. Consider also the following:

- If the rate of attrition between 2000 and 2013 continues, perhaps less than 25 programs may persist across North America in 10 years, considering that 13 (37 percent) of the 35 existing faculty were 55 years or older in 2013 and may retire within approximately a decade.
- Ten (29 percent) of these faculty at U.S. and Canadian institutions are not university employees but are state or federal employees residing at state or provincial universities. Three of the faculty who are federal employees of the U. S. Geological Survey succeeded the university faculty member when that person retired and the university did not fill the position with a waterfowl expert. Thus, university departments and partners have sought ways to sustain this important discipline in their university and state or province.
- Several scientists from public or private research centers around the U.S. and Canada also serve as adjunct university faculty and committee members to graduate students studying waterfowl, which helps compensate declining numbers of waterfowl professors. However, will the adjunct faculty be permitted by their employers to continue their service roles to university students and waterfowl resources in the future amidst competing research on broader natural resource issues and declining funding for waterfowl research?
- Some colleagues argue justifiably that university faculty without waterfowl-related interest and expertise can teach, conduct research, and perform outreach in the waterfowl arena. While this may be true, these scientists are often not acquiring extramural funding specifically for waterfowl-related research because this arena is not their area of expertise or interest. Thus, they may not have funding to support graduate students who want to research waterfowl, earn a post-graduate degree in this specialty, and then pursue science or conservation careers or academia in the waterfowl arena.
- Annually, over 20 inquiries from excellent prospective students interested in pursuing a M.S. or Ph.D. degree studying waterfowl or wetlands are received at Mississippi State. Many times, these students are turned away because support does not exist. Indeed, students desiring to specialize and subsequently work in the waterfowl arena deserve opportunity to acquire their degree and this expertise. University faculty, administrators, and external partners in waterfowl ecology and conservation must strive to sustain remaining faculty positions and justify additional ones.

Restoring Waterfowl Education

In today's dynamic world—where a host of biological, industrial, agricultural, human, and natural-resource issues compete for funding at local to global scales—it's essential that university and partnering natural resources' administrators and legislators understand the ecological, environmental, and economic values of waterfowl and their habitats.

Faculty may have to begin the education process with department heads and deans, who then may communicate the message to top administrators in academia, agencies, government, and foundation directors. Additionally, there are several steps universities can take to thwart declining programs in waterfowl ecology and management at universities. Among them:

Cooperatives. Universities, natural-resource agencies, and conservation organizations should partner and establish research and management cooperatives, whereby university graduate students and expert faculty can function as research and outreach "arms" for public or private conservation groups. For example, wildlife faculty and graduate students at Mississippi State University have served the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) and other partners for decades, conducting research to guide waterfowl and other wildlife conservation programs scientifically in the state and region (e.g., Lower Mississippi Valley and Gulf Coast Joint Ventures of the North American Waterfowl Management Plan (NAWMP). The MDWFP have provided funding from Federal Aid in Wildlife Restoration and the state waterfowl stamp to support research benefitting waterfowl habitat and population management in Mississippi and NAWMP Joint Ventures. Support from MDWFP has been critical to conduct research on waterfowl and wetlands and has enabled Mississippi State to leverage MDWFP support for additional extramural funding from a variety of public and private sponsors. Indeed, other states should consider following this model.

Endowed Chairs. University faculty, administrators, and development directors can collaborate to seek and secure endowed chairs and professorships in waterfowl and wetlands and other key disciplines. For example, James Kennedy and his wife established the James C. Kennedy Endowed Chair in Waterfowl and Wetlands Conservation at Mississippi State University. The university is grateful for their vision and generosity to establish the chair, which sustains the teaching, research, and service programs in waterfowl and wetlands at MSU in perpetuity. Only three (9 percent) of the 35 remaining U.S. and Canadian waterfowl faculty and their programs are currently endowed. Hence, great future opportunity exists to identify potential donors and implement this strategy to sustain or create new waterfowl and other key wildlife educational specialties in universities, especially in regions where waterfowl and other wildlife conservation and recreation remain prominent. Clearly, endowed chairs and professorships focused on research and conservation of game animals are critical to create, as the wildlife profession increasingly diversifies research and conservation initiatives toward all wildlife which dilutes funding for traditional game animal programs.

Enhanced Undergraduate Research. Several faculty employed by largely undergraduate institutions have implemented or will initiate waterfowl teaching and research programs involving undergraduates or graduate students. The undergraduate research concept has been used effectively and historically in Canada, where students pursue and complete an honors thesis after conducting research with a

supervisory faculty member(s) or graduate student(s). Increased undergraduate research also is emerging significantly within major U.S. institutions, and the National Science Foundation is supporting such endeavors to increase numbers of scientists. Faculty members at all universities, particularly those with expertise and passion in waterfowl ecology and management, should be encouraged and rewarded for providing interested undergraduate scholars opportunity to become scientists and conservationists, greatly enhancing their academic dossier and practical skills to lead waterfowl and other science or conservation professional initiatives.

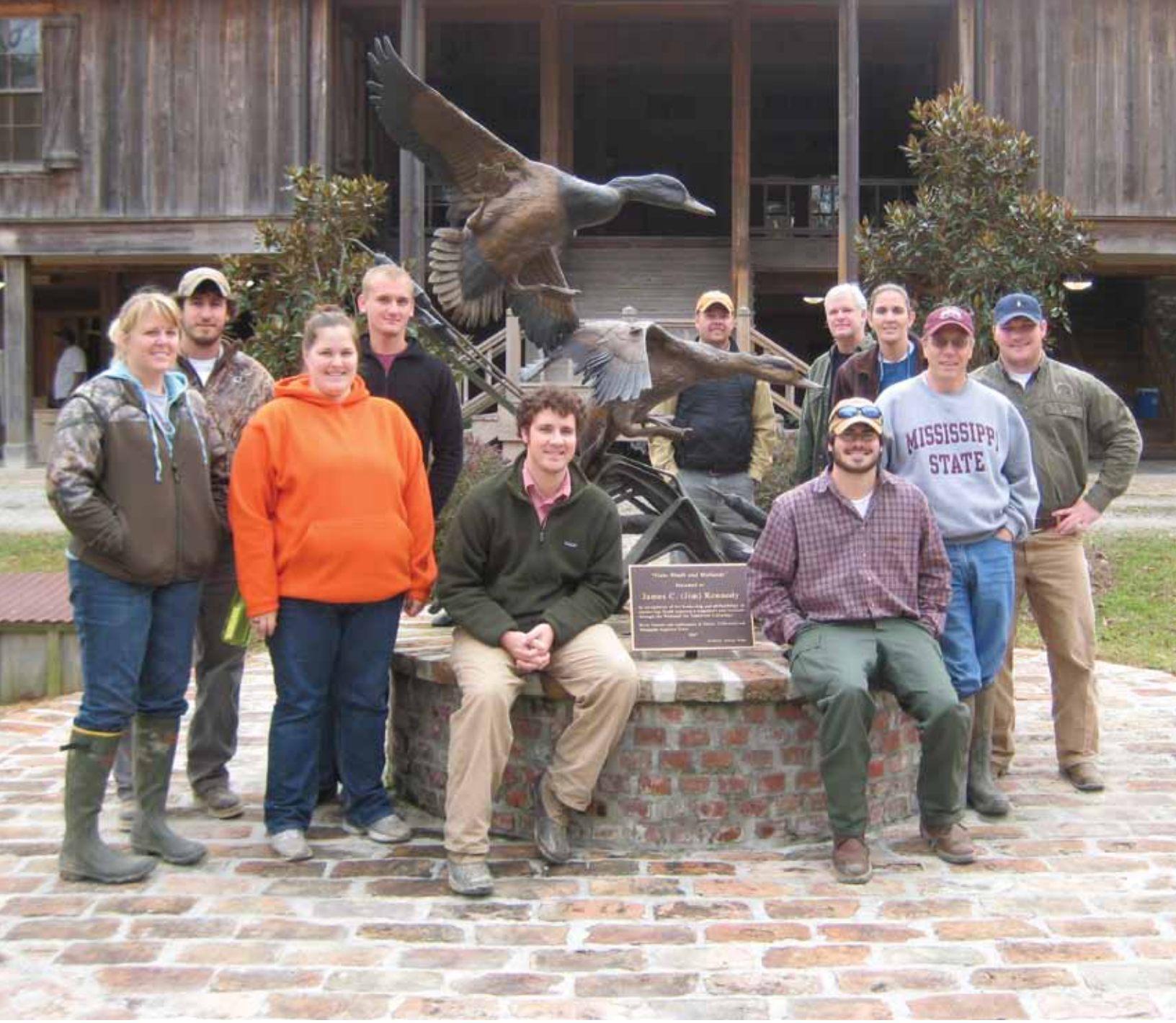
Setting Future Sights and Goals

So, how many university-based waterfowl programs might be adequate in North America? At the very least, the remaining positions and programs should be preserved. Faculty lines still existing but vacant at universities should be restored, especially where faculty and students could be research arms of Joint Ventures under NAWMP. Indeed, Joint Ventures and Landscape Conservation Cooperatives are encouraged to continue seeking university partners and collaborate in research for waterfowl and other natural resources conservation initiatives.

Additionally, gender, racial, and cultural diversity should be increased among faculty members in general to educate and mentor a growing diversity of undergraduate and graduate students in universities pursuing wildlife and other natural resources curricula. Clearly, the need for enhanced human diversity is a widespread goal in academia and in both public and private sectors of natural resources conservation. Increased diversity and numbers of faculty with waterfowl expertise at North American universities would enhance faculty and student intellectual diversity and guard against students graduating from a “handful” of universities with waterfowl programs.

Finally, it appears that a university-based waterfowl program in Mexico does not exist, despite Mexico’s importance to North American waterfowl and its membership in NAWMP. It is hoped that this article piques the interest of scientists in Mexico. Perhaps Ducks Unlimited de Mexico can partner with public and private sectors to advance education and research on waterfowl and wetlands in Mexico.

As Aldo Leopold, father of wildlife management, wrote in his classic book, A Sand County Almanac, “To keep every cog and wheel is the first precaution of intelligent tinkering.” Waterfowl and their habitats are essential cogs and wheels in Earth’s eco- and human systems, and therefore must be sustained through efforts of well-trained professionals dedicated to their conservation. Colleagues in academia and elsewhere in the wildlife profession are encouraged to use all available strategies to sustain, restore, or create university waterfowl programs that will produce human “cogs and wheels” for study and stewardship of waterfowl and other natural resources.



Mississippi State University students enrolled in waterfowl and wetlands ecology and management courses are exposed to flora, fauna, and management practices in waterfowl habitats throughout the Mississippi and other continental flyways. Here, MSU students congregate for a picture at York Woods lodge in the Lower Mississippi Alluvial Valley. York Woods is owned by James C. Kennedy, who established the James C. Kennedy Endowed Chair in Waterfowl and Wetlands Conservation at MSU.

Table 1. University units in the United States and Canada with natural resources or biological science programs that were investigated for existence of teaching or research programs in waterfowl ecology and management in 2000 (Kaminski 2002) and 2013.

Location	Institution	Unit	Extant program in 2013
United States			
Alabama	Auburn University	Forestry and Wildlife Science	Yes
Alaska	University of Alaska	Biology and Wildlife	Yes
Arizona	University of Arizona	Natural Resources and Environment	No
Arkansas	University of Arkansas	Biological Sciences	Yes
California	University of California-Berkeley	Ecosystem Systems	No
	University of California-Davis	Wildlife, Fisheries, and Conservation Biology	Yes
	Humboldt State University	Wildlife	Yes
Colorado	Colorado State University	Fishery and Wildlife Biology	No[a]
Connecticut	University of Connecticut	Natural Resources Management and Environment	No[a]
Delaware	University of Delaware	Entomology and Wildlife Ecology	Yes
Florida	University of Florida	Wildlife Ecology and Conservation	Yes
Georgia	University of Georgia	Forestry and Natural Resources	No[a]
Hawaii	University of Hawaii[b]	Agriculture, Forestry, and Natural Resources	No
Idaho	University of Idaho	Fish and Wildlife Resources	No
Illinois	Southern Illinois University	Wildlife Research Laboratory	Yes[c]
	University of Illinois	Natural History Survey	Yes
Indiana	Purdue University	Forestry and Natural Resources	No
Iowa	Iowa State University	Natural Resources Ecology and Management	No
Kansas	Kansas State University	Biology	Yes
Kentucky	University of Kentucky	Forestry and Wildlife	No
Louisiana	Louisiana State University	Forestry, Wildlife, and Fisheries	Yes[a]
Maine	University of Maine	Wildlife Ecology	No
Maryland	Frostburg State University	Biology	No
Massachusetts	University of Massachusetts-Amherst	Environmental Conservation	No
Michigan	Michigan State University	Fisheries and Wildlife	No[a]
Minnesota	University of Minnesota	Fisheries, Wildlife, and Conservation Biology	Yes
Mississippi	Mississippi State University	Wildlife, Fisheries, and Aquaculture	Yes[c]
Missouri	University of Missouri-Columbia	Fisheries and Wildlife Conservation	Yes
Montana	Montana State University	Fish and Wildlife Management	Yes
	University of Montana	Forestry and Conservation	Yes
Nebraska	University of Nebraska-Lincoln	Fisheries and Wildlife	Yes
Nevada	University of Nevada-Reno	Ecology, Evolution, and Conservation Biology	Yes
New Hampshire	University of New Hampshire	Wildlife and Conservation Biology	No
New Jersey	Rutgers University	Wildlife Resources	No
New Mexico	New Mexico State University	Fishery, Wildlife, and Conservation Ecology	No
New York	Cornell University	Natural Resources	Yes
	State University of New York-ESF (Syracuse)	Environmental Science and Forestry (ESF)	No[a]
North Carolina	North Carolina State University	Fisheries, Wildlife, and Conservation Biology	No

Location	Institution	Unit	Extant program in 2013
North Dakota	University of North Dakota	Biology	No[a]
	North Dakota State University	Natural Resources Sciences	No
Ohio	The Ohio State University	Environment and Natural Resources	Yes
Oklahoma	Oklahoma State University	Zoology	Yes
Oregon	Oregon State University	Fisheries and Wildlife	Yes
Pennsylvania	Pennsylvania State University	Forest Resources	No
Rhode Island	University of Rhode Island	Natural Resources Sciences	Yes
South Carolina	Clemson University	Wildlife and Fisheries Biology	No
South Dakota	South Dakota State University	Wildlife and Fisheries Sciences	Yes
Tennessee	Tennessee Tech University	Biology	Yes
	University of Tennessee	Forestry, Wildlife, and Fisheries	Yes
Texas	Stephen F. Austin University	Forestry and Wildlife	No
	Texas A&M University-College Station	Wildlife and Fisheries Sciences	No
	Texas A&M University-Kingsville	Caesar Kleberg Wildlife Research Institute	Yes
	Texas Tech University	Natural Resources and Fishery Management	No[a]
Utah	Utah State University	Fisheries and Wildlife	Yes
Vermont	University of Vermont	Natural Resources	No
Virginia	Virginia Tech University	Fish and Wildlife Conservation	No[a]
Washington	Washington State University	Natural Resources Sciences	No
West Virginia	University of West Virginia	Wildlife and Fisheries Resources	Yes
Wisconsin	University of Wisconsin (UW-Madison)	Forest and Wildlife Ecology	No[a]
	UW-Stevens Point	Natural Resources	No
Wyoming	University of Wyoming	Zoology and Physiology	No[a]
Canada			
Alberta	University of Alberta	Wildlife Ecology	No
British Columbia	University of British Columbia	Zoology	No
	Simon Fraser University	Wildlife Ecology	No[a]
Manitoba	University of Manitoba	Natural Resources	No
New Brunswick	University of New Brunswick	Forestry and Environmental Management	No
Newfoundland	Memorial University	Biology	No
Nova Scotia	Acadia University	Biology	No
	St. Francis Xavier University	Biology	No[a]
Ontario	University of Guelph	Integrative Biology	Yes[a]
	University of Toronto	Ecology and Evolutionary Biology	No
	University of Western Ontario	Biology	Yes
Quebec	McGill University	Natural Resources Sciences	No[a]
	University of Laval	Biology	Yes
	University of Quebec-Montreal and Rimouski	Biology	Yes[c]
Saskatchewan	University (Regina)	Biology	No
	University (Saskatoon)	Canadian Wildlife Service	Yes[c]

a. Death, departure, or retirement of waterfowl faculty member(s) after 2000 without subsequent replacement of a faculty with waterfowl expertise.
b. Institution was not surveyed in 2000.
c. Units with two waterfowl faculty in 2013.

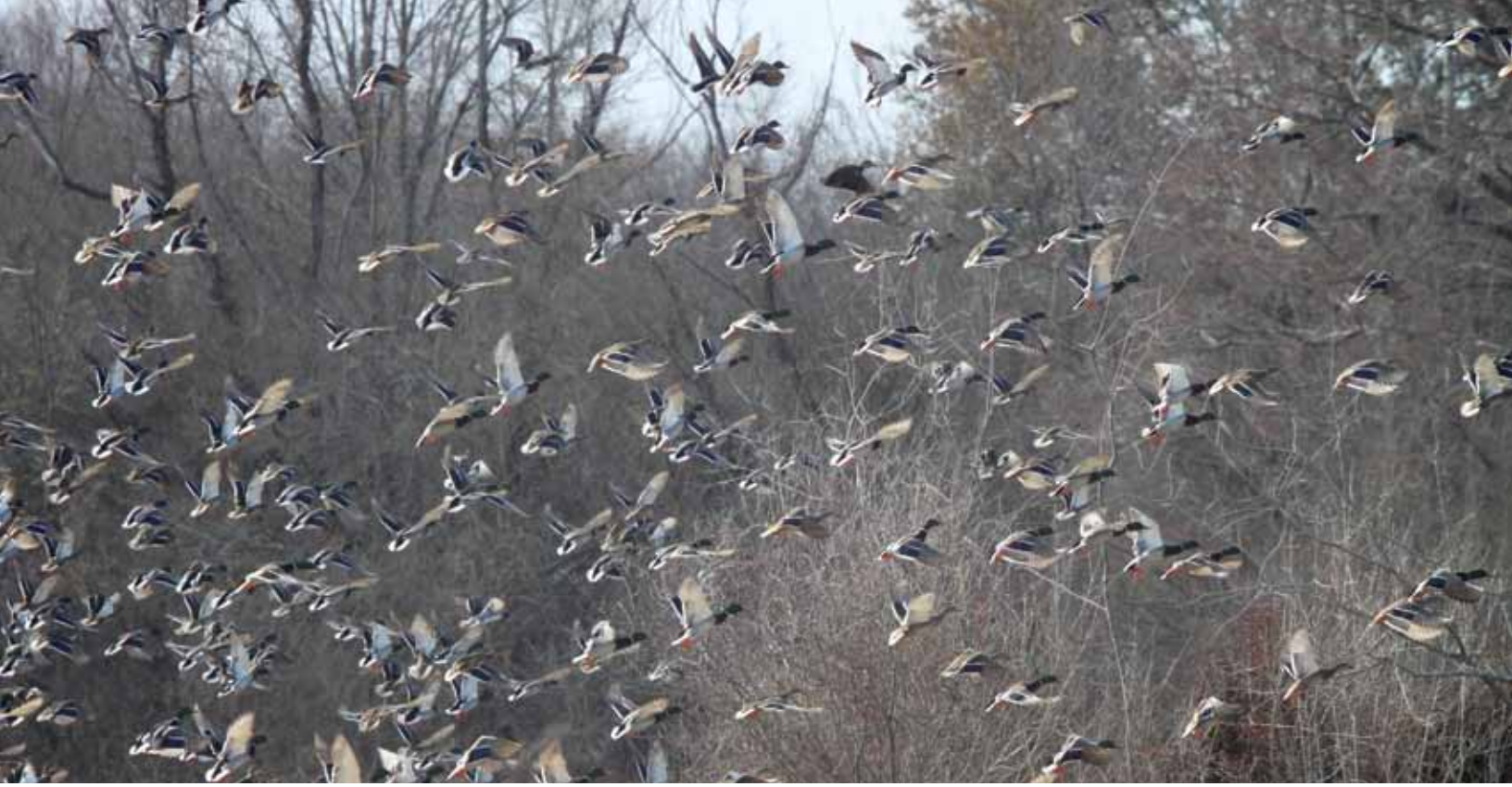
Conferees' Assessment of the 6th North American Duck Symposium (2013), "Ecology and Conservation of North American Waterfowl"

By: Lucien P. LaBorde, Jr., School of Renewable Natural Resources, Louisiana State University,
Richard M. Kaminski, Department of Wildlife, Fisheries and Aquaculture, Mississippi State University,
J. Brian Davis, Department of Wildlife, Fisheries and Aquaculture, Mississippi State

Waterfowl (Anatidae; ducks, geese, and swans) are important birds ecologically, environmentally, and economically. They have been the focus of research, conservation, and recreation in North America since the 20th century. Ducks are the most taxonomically diverse group within the family, composed of seven tribes and over 50 surviving species in North. To help sustain waterfowl resources in North America, biologists and managers have convened conferences and symposia to communicate contemporary information on these birds, certain species and populations of concern, and their habitats.

The inaugural North American Duck Symposium and Workshop (NADS) occurred in Baton Rouge, Louisiana in 1997. It was a seminal event that attracted professionals and students from across North America to address ecology and management of wild ducks, synthesize acquired knowledge, and convey future needs and directions for research, management, and conservation. An important objective of all NADS has been to attract students to present oral or poster presentation of their research and promote their professionalism. The founders of NADS believed that research questions and management issues related to sustaining duck populations, maintaining the tradition of wildfowling, advancing ecological study of the birds, and involving students were paramount. Additionally, the founders believed that waterfowl ecologists had led major advances in avian biology and sought to ensure this legacy was perpetuated.

Since 1997, six NADS have been convened but none to date has been evaluated by conferees using scientific methodology. Locations of all previous NADS were: 1) Baton Rouge, Louisiana; 2) Saskatoon, Saskatchewan (2000); 3) Sacramento, California (2003); 4) Bismarck, North Dakota, (2006); 5) Toronto, Ontario, (2009); and 6) Memphis, Tennessee (2013). Locations generally have rotated between the United States and Canada, among flyways, and generally in northern and southern North American locations. Each NADS has been organized under the direction of a scientific committee with their discretion as to theme, content, and venue.



The Science Program Committee for NADS 6 agreed the symposium would be expanded to include all taxa of Anatidae and not be restricted solely to ducks. Thus NADS 6 was sub-titled "Ecology and Conservation of North American Waterfowl (ECNAW; http://www.northamericanducksymposium.org)." To promote diverse topical content on all waterfowl at NADS 6/ECNAW, the Science Program Committee also invited the North American Arctic Goose Conference and Workshop and the International Sea Duck Conference to become joint partners in NADS 6/ECNAW.

Feedback and evaluation are integral components of wildlife-science and conservation, stakeholder engagement, and continuous programmatic improvement. Following NADS 6/ECNAW, Rick Kaminski and Brian Davis, primary organizers of the symposium, decided to conduct a post-symposium survey of conferees. L. P. Laborde, senior author with human-dimensions survey-sampling skills, was asked to develop the survey instrument. Specifically, the objective was to poll meeting participants on evaluative and planning criteria that will be used to guide and improve subsequent NADS symposia. This information also will be valuable to other wildlife professionals planning and implementing conferences and symposia.

Methods

The NADS 6/ECNAW post-symposium survey was developed to solicit responses to 12 evaluative questions, 18 planning questions, and 3 demographic questions. Conference sessions were evaluated on a nominal scale of 1 = "not valuable" to 4 = "highly valuable." Agreement with statements addressing the symposium venue, scheduling, program, and costs also were ranked on a nominal scale of 1 = "strongly disagree" to 5 = "strongly agree." Those surveyed also had the opportunity to share comments about the symposium. The survey was distributed in February 21, 2013, three weeks after the symposium via e-mail to all 450 conferees. Each conferee received an e-mail requesting completion of the survey with embedded link using the web-based survey software Qualtrics™

v. 12000. Conferees were contacted up to three times to elicit their response. Alternate responses via electronic document, post, or e-mail were also provided. Responses were limited to one per Internet Protocol (IP) address to minimize multiple responses per attendee. Survey protocols ensured anonymity and confidentiality, and were approved by the Louisiana State University Agriculture Center Institutional Review Board. Responses were collected through March 21, 2013. There were no direct costs to administer the survey.

Results

The post-symposia survey was completed by 284 conferees, a 63 percent response rate. Respondents were 85 percent male but gender proportions of respondents did not differ from non-respondents. By occupation, 15 percent of conferees were in academia, 23 percent were students, and 60 percent were professional biologists, managers, or administrators. Those in academia responded to the survey more frequently (89%) than students (62%) or professionals (57%). Because over 55 percent of conferees across occupation classes responded, overall response was over 60 percent, and proportions of responding and non-responding conferees did not differ by gender, further analyses for non-response bias were not conducted. It was assumed that the data from respondents generally were representative of all conferees.

The four daily plenary sessions of the symposium were attended by over 88 percent of respondents, and their ratings averaged 3.2-3.3, indicating their assessment of plenaries ranged from moderate to high value. One day before grand opening of the symposium and a travel day, there was a special session on the 2012 revision of the North American Waterfowl Management Plan; it was attended by 28 percent of the respondents, with an average rating of 3.1. The remaining seven evaluative statements pertained to relevancy of information presented at the symposium, logistics, and the hotel venue itself. Mean ratings ranged from 3.3-4.4, indicating their assessment ranged from moderate to strong agreement.

Eighteen questions addressed conferee preferences for future NADS, of which four specifically addressed format of future symposia. Sixty-three percent and 77 percent of respondents preferred morning plenary and afternoon oral presentations, respectively, of the same length as NADS 6. While NADS 6 included 6-7 concurrent sessions during three afternoons, 58 percent of respondents preferred only 2-3 concurrent sessions, and 32 percent desired 4-5 concurrent sessions. Only 2 percent wanted to continue the NADS 6 format of 6-7 sessions, which was necessary to accommodate numerous presenters at this all-waterfowl symposium. Given options for convening more frequent symposia, 66 percent of respondents preferred the current format of a 4-day symposium every three years. Given options of integrated plenary topics in 4-day or two 2-day formats with different registration options and costs, 73 percent preferred the current format of 4 days with four different daily plenary sessions and a single registration fee. Cross-tabulation of the above four questions about the format of future symposia confirmed that over 50 percent of all three occupational groups preferred the identical response alternatives identified above.

Eleven statements addressing symposium venue, scheduling, program, and costs were rated as described previously. Conferee's responses ranged from neutral to agreeable to eight statements, indicating that evenings were preferred for poster sessions, the student mentee-mentor session should be continued, door prizes

should be given to students and professionals during breaks of sessions, and hotels should be chosen with consideration of cost of public transportation between airports and hotels. Conferees neither agreed nor disagreed that breakfasts should be provided as part of registration costs and that speakers and entertainment during lunch enhanced the program. Importantly, conferees disagreed that future NADS should address ducks only.

One hundred and two respondents or 36 percent offered comments, of which 47 were congratulatory in nature. Twenty-nine comments revealed a concern of too many concurrent sessions, and 26 comments addressed the daily rate of the host hotel, which exceeded federal and some state expense limits.

Sixty-five percent of respondents indicated they were "likely" or "very likely" to attend NADS 7, and 35 respondents volunteered to serve on an organizing committee for NADS 7.

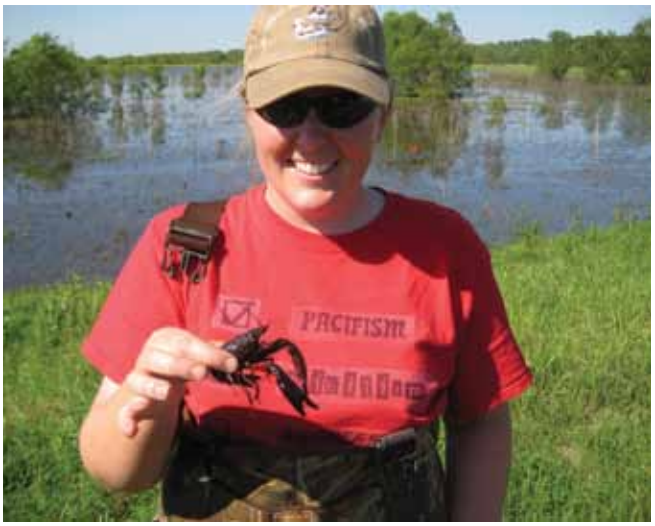
Discussion

Survey results confirmed that NADS 6/ECNAW was well organized, presented relevant content, and was valuable to conferees. Responses and comments suggest that host hotel rates should fall within federal and other expense guidelines, and host hotel location should be within walking distance of restaurants and other amenities. Future NADS should continue on a 3-year rotation and retain its single registration, 4-day format with four morning plenary sessions. Following the precedent of NADS 6, 73 percent of respondents recommended that future symposia should embrace all taxa of Anatidae. Indeed, there is an inherent trade-off between an all-waterfowl symposium, the number of concurrent sessions in such venues, and possible competition for attendance and fund-raising between NADS and other waterfowl, ornithological, and wildlife conferences.

Access to web-based survey tools and an e-mail survey of conferees make post-symposia surveys an inexpensive yet effective method for evaluation of conferences and planning future events. The NADS 6 post-symposia survey was effective in verifying relevance and value of symposia presentations, the frequency and format of future symposia, and general guidelines for location and cost of host hotels. The survey also was able to identify volunteers for organizing committees of the next symposium.

The survey of NADS 6/ECNAW conferees was the first known survey of an international waterfowl conference. The same or a similar survey for future NADS is recommended for unbiased comparisons of data among surveys. Additionally, other wildlife and natural resources conferences and symposia should conduct similar post-meeting surveys to evaluate and plan future meetings. When combined with early program and hotel planning and integration of experienced committee volunteers from previous symposia, post-conference surveys can help to assure the efficiency and relevance of future events. Based on experiences gained in convening NADS 6/ECNAW, NADS 7 organizers should begin contracting with a host hotel and major fundraising about two years before the symposium.

Ecosystem Services Provided by Moist-Soil Wetland Management



By Amy Alford, Ph.D. student

Little information is available on ecosystem services of moist-soil wetlands. This research addressed water quality benefits and harvest of native crayfish for human consumption from moist-soil wetlands that are also important to waterfowl.

Concentrations and loads of phosphorus, nitrate, ammonium, and total suspended solids were compared in runoff from moist-soil wetlands and adjacent crop fields during winters 2010-2012. Yields of native crayfish were estimated using typical harvest strategies practiced in commercial rice-crayfish fields in Louisiana. Break-even budgets were created for crayfish harvest operations in moist-soil wetlands on public and private lands in Arkansas, Louisiana, Mississippi, and Missouri in springs-summers 2009-2011. Additionally, consumer acceptability and nutritive content of crayfish harvested from moist-soil wetlands and conventional production systems were compared.

Concentrations of phosphorus, nitrate, and total suspended solids were 70-100 percent greater in agricultural field runoff compared to runoff from moist-soil wetlands. Average loads of total suspended solids also were significantly less in moist-soil runoff, although loads of soluble reactive phosphorus were four times more in moist-soil runoff than agriculture field runoff. Decaying vegetation in moist-soil wetlands may be a source of this phosphorus.

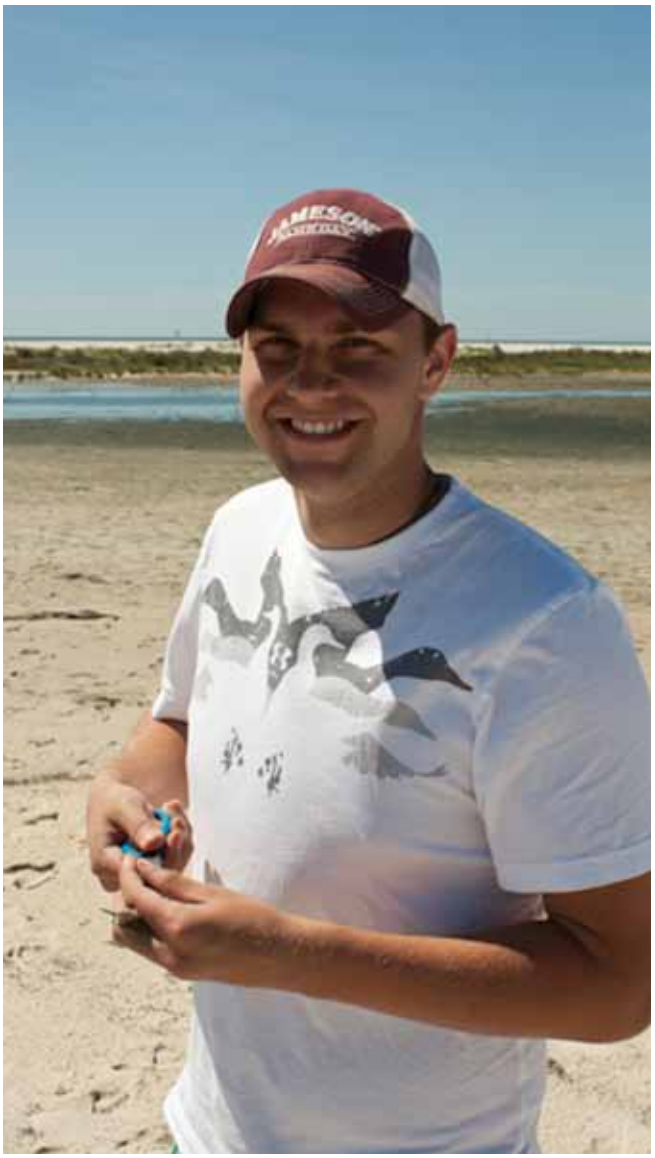
Average daily yield of crayfish from moist-soil wetlands was 2.73 kg/ha which was less than yields expected from intensive crayfish culture in Louisiana rice fields (8-10 kg/ha). Estimated cost associated with harvest of crayfish from moist-soil wetlands only was $529/ha compared to $1,856/ha from rice-crayfish culture systems. The break-even selling price for crayfish harvested from moist-soil wetlands was $4.90/kg compared to $2.75/kg for single crop production of crayfish in Louisiana. There was no significant difference in overall consumer acceptability of cooked crayfish samples. Gross energy, protein content, and total fatty acid content of crayfish did not differ between native and stocked crayfish, although crayfish from moist-soil wetlands had 40 percent greater concentrations of specific beneficial polyunsaturated fatty acids.

Harvesting crayfish from moist-soil wetlands will likely provide additional recreational and land-leasing opportunities and can serve as additional justification for wetlands conservation in the Lower Mississippi Valley. Moreover, increasing moist-soil wetland habitat has the potential to provide water quality benefits.

Shorebird use of wetlands and aquaculture ponds in the Mississippi Alluvial Valley and Gulf Coast region

By Justyn Foth, Ph.D. student

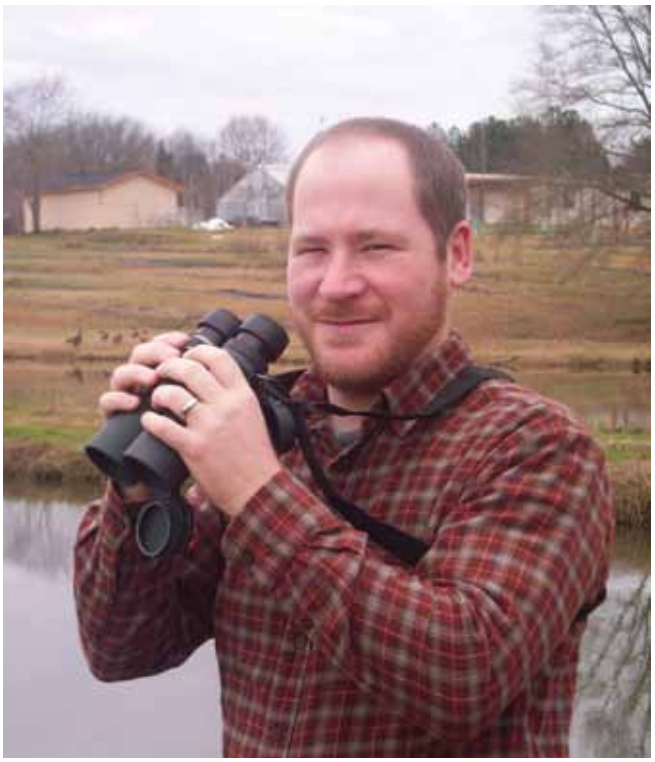
The Mississippi Alluvial Valley (MAV) was once covered by forested wetlands. However, in the last century, most of the MAV has been converted to agriculture, aquaculture, and other land uses which have provided new stop-over and wintering habitats for migrating shorebirds. Prior to human changes of the landscape, shorebirds likely migrated past the MAV to wetlands along the Gulf Coast. In 2010, the Deep-water horizon oil spill occurred in the Gulf of Mexico and the USDA Natural Resources Conservation Service implemented the Migratory Bird Habitat Initiative (MBHI) to provide migratory shorebirds and other waterbirds with wetlands inland from oil impacted coastal wetlands. The objective of this research was to estimate species composition and relative abundance of migrating shorebirds on MBHI associated wetlands in the MAV and Gulf Coast regions during the summer-fall migration. In 2011 and 2012, mean relative abundance of shorebirds using MBHI enrolled wetlands was eight and four times greater, respectively, than wetlands not enrolled in MBHI. This is likely because management



created mudflats and shallow water otherwise not present in non-managed areas. Shorebird migration peaked in early September 2011 and similarly in late August 2012. Continued research on shorebirds in the MAV and Gulf Coast will incorporate stable isotope analysis to assess connectivity and oil signatures in shorebird tissue and food sources. This research is expected to provide conservation planners with tools to predict shorebird abundance and manage wetlands accordingly.

Winter Waterbird use and food resources of aquaculture lands in Mississippi

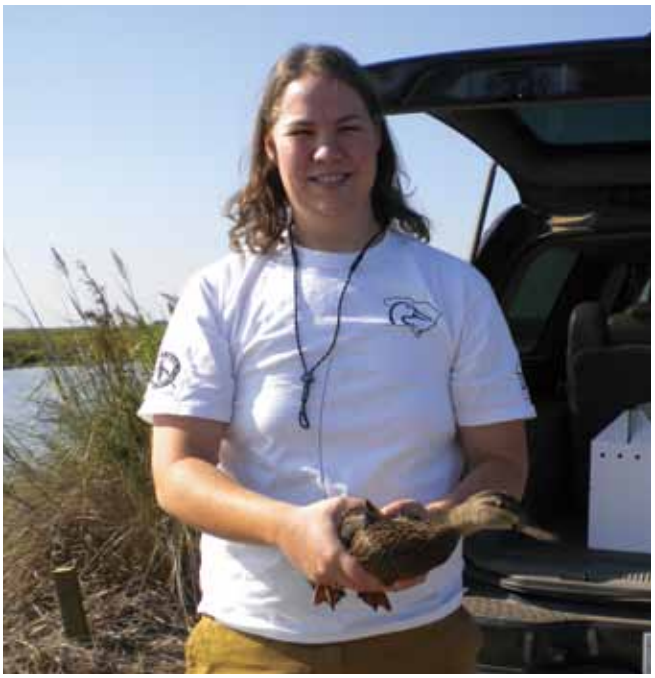
By Jim Feaga, M.S. student



The conversion to wetlands of aquaculture production systems provides alternate aquatic habitats for a variety of waterbirds. In response to the 2010 British Petroleum oil spill in the Gulf of Mexico, the National Resource Conservation Service (NRCS) established the Migratory Bird Habitat Initiative (MBHI) through which NRCS partnered with landowners to provision wetlands and associated foraging habitat for migrating waterbirds inland and away from potentially oil impacted coastal wetlands. The NRCS designated idled and drained catfish ponds in the Mississippi Delta as possible habitats that could be flooded and otherwise managed through MBHI to provide wetlands for waterbirds inland from the coast. I estimated abundances of waterbirds, seeds, and aquatic invertebrates in six production and six idled catfish ponds that were flooded to create mudflats and shallow water for shore- and other waterbirds. Wintering waterbirds exhibited similar densities on production (22 birds/ha) and MBHI managed catfish ponds (i.e., 20 birds/ha); however, over 40 species of waterbirds were observed on MBHI ponds compared to less than 10 species dominating on production ponds. My results suggested that production and MBHI managed catfish ponds collectively provided habitat attracting a wide diversity of waterbirds. I recommend future programs strive to enroll properties that promote increased diversity of habitats in terms of vegetation structure, available forage, and varying water depths, with the aim of maximizing waterbird diversity and abundance.

Habitat use by mottled duck broods in South Carolina

By Molly Kneece, M.S. student



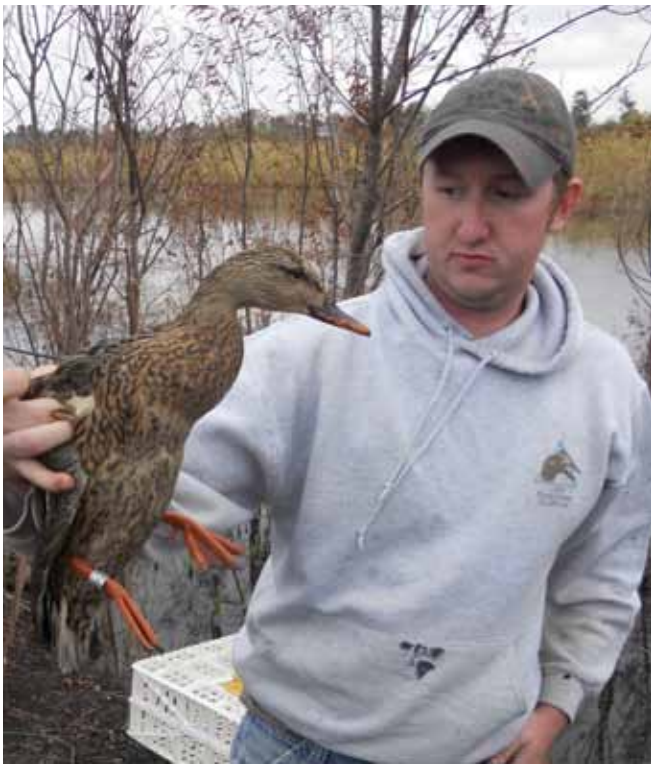
The mottled duck is primarily found in the Gulf of Mexico, inhabiting coastal marshes from Tampico, Mexico, north along the Gulf Coast of Texas, Louisiana, Mississippi, and Alabama, with a separate population occurring in Florida. In the late 1970s, free-ranging mottled ducks were transported from Louisiana, Texas, and Florida and were released on coastal wetlands in South Carolina. Unpublished banding data indicated an expanded population of mottled ducks in South Carolina since their release. Although several studies of mottled ducks have been conducted throughout the birds' historic range, little research on the species has been conducted in South Carolina. This study is the second of two consecutive research projects that are investigating the seasonal ecology of mottled ducks in South Carolina. The first and ongoing study between the Nemours Wildlife Foundation, South Carolina Department of Natural Resources, and Mississippi State University is examining nesting biology of mottled ducks in the Ashepoo, Combahee, and Edisto Rivers (ACE) Basin in South Carolina. This study focuses on brood rearing ecology— the movements, habitat use, and estimated survival of mottled duck ducklings and broods on public and private lands in the ACE Basin.

In August 2012, radio transmitters were implanted into 73 molting female mottled ducks. These ducks were intensively tracked to locate nests during spring-summer 2013. To increase sample size of marked birds, 16 nests of non-marked female mottled ducks were located. Five of the non-marked female mottled ducks were captured and outfitted with backpack style radio transmitters. Through July 2013, five radiomarked females with broods were followed for 62 days and 70 locations. During brood rearing, all radiomarked females survived, and apparent brood survival was 60 percent. A precise estimate of duckling survival has not been obtained because of small sample size and minimal visibility of broods. Data will continue to be analyzed from 2013 and a second field season will be conducted in 2014.

Mottled ducks are a focal species for conservation and management in the ACE Basin and are coveted by South Carolina's waterfowl hunters. This study will help managers understand habitat requirements of brood rearing mottled ducks to guide management for this species in the ACE Basin.

Habitat use and survival of mallards wintering in the Mississippi Delta

By Joe Lancaster, M.S. student

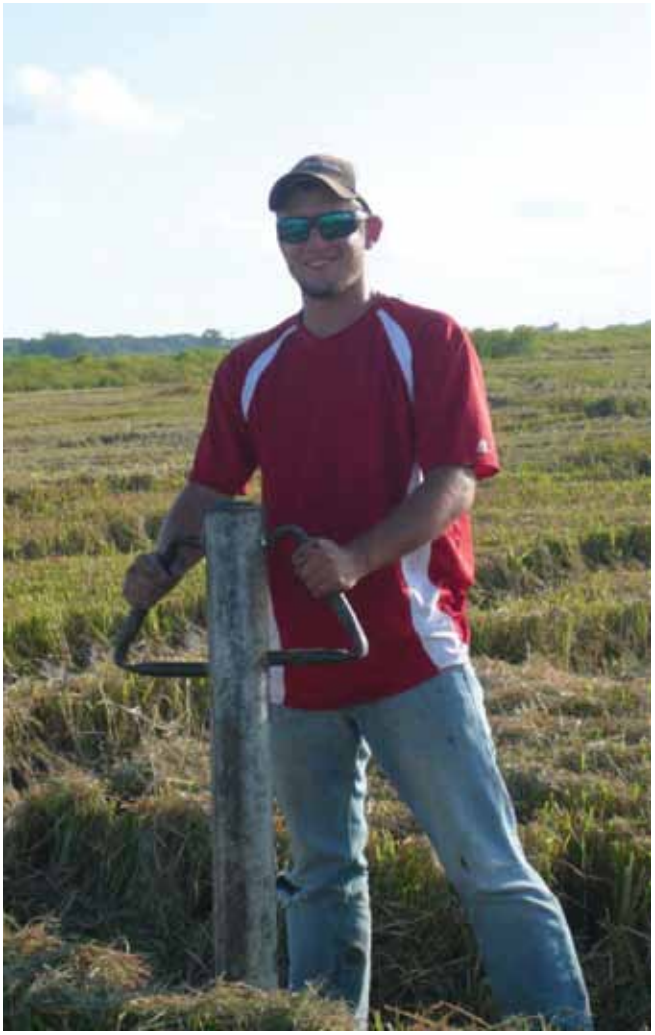


The Mississippi Alluvial Valley (MAV) is an important region for wintering mallards in North America, yet little is known about their habitat use and related survival in Mississippi. Moreover, wildlife management area (WMA) personnel limit hunting activities to 2-3 days per week to promote quality hunting opportunities; however, waterfowl response to these regimes has not been evaluated. Scientists tracked 126 radio-marked female mallards to quantify survival, habitat use, and general use of WMAs with experimental hunt regimes in the south MAV of Mississippi during winters 2010-2012. Daily survival was greatest in agricultural and moist-soil habitats in winters 2010-2011 and 2011-2012, respectively. Overall survival across both winters was 60 percent. Greatest daily habitat use occurred in forested areas 40-54 percent and moist-soil wetlands 41-59 percent. The data suggest that complexes of flooded cropland, forested, and moist-soil wetlands are suitable habitats for mallards in the MAV during winter, because this complex of habitats received most use by mallards. Also, birds' experienced greatest survival using forested and moist-soil wetlands. Mallards used WMAs similarly whether they were hunted 2- or 4-days per week. Mallards used WMA sanctuaries less than hunted units at Muscadine and Mahannah WMAs but equal to hunted units during the hunting season. Radio-marked mallards did not increase avoidance of WMAs hunted 4-days per week suggesting that managers may increase hunting opportunities to 4-days per week. Managers may consider revisiting size and design of sanctuaries at Muscadine and Howard Miller WMAs using Mahannah's sanctuary as a model because a substantial forested buffer separates sanctuary from hunted areas.

Seed and waterbird abundances in ricelands in the Gulf Coast Prairies of Louisiana and Texas

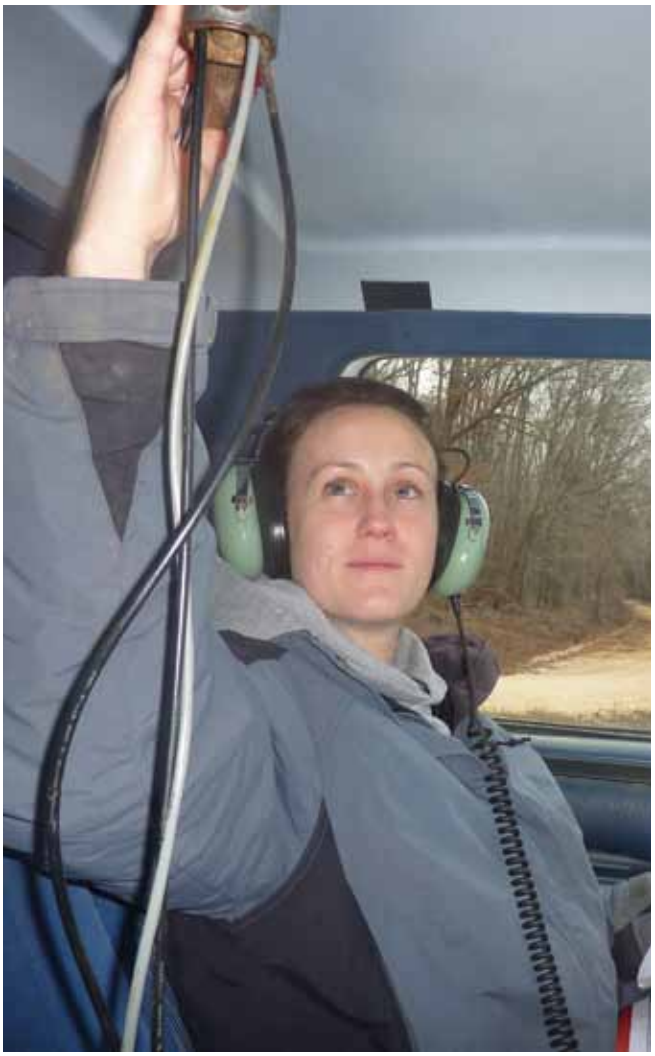
By Joe Marty, M.S. student

Rice not collected by harvesters and natural seeds in ricefields are important foods for waterfowl. Estimation of abundance of these seeds is necessary for calculating waterfowl habitat conservation needs where rice is grown and waterfowl winter. The objectives of this study were to quantify dry mass of rice and natural seeds and estimate waterfowl and other waterbird abundances on farmed and idle ricelands in the Louisiana Chenier Plain and Texas Mid-Coast during fall-winter 2010 through early spring 2011. Rice abundance in farmed ricelands ranged from 159.7 kg/ha to 1,014.0 kg/ha. Natural seed abundance in idle ricelands ranged from 99.7 kg/ha to 957.4 kg/ha. Greatest waterbird densities occurred in shallowly flooded disked ricelands which averaged 7.35 waterfowl/waterbirds per hectare. Ratoon, disked, and shallowly flooded ricelands are important habitat for non-breeding waterbirds but variable estimates of seed and waterbird abundances warrant continuation of this study, which is ongoing through 2014.



Survival and habitat selection of female American Black Ducks in Tennessee

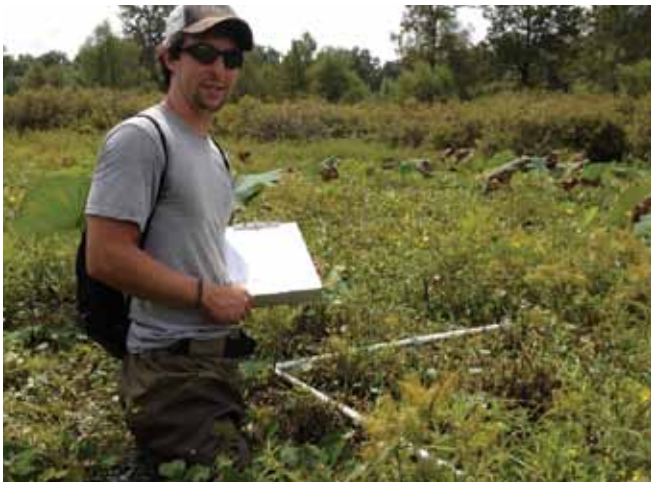
By Kira Newcomb, M.S. student



The American black duck declined in portions of its range between the 1950s and 1990s. However, the 2013 waterfowl breeding population report indicated no statistical change in the number of breeding black ducks from the 1990-2012 average. Nonetheless, some important wintering areas in the Mississippi Flyway, such as the Tennessee National Wildlife Refuge (TNWR) in western Tennessee, have documented consistent declines in abundance of wintering black ducks. To improve understanding of black duck winter survival and habitat selection at TNWR, 113 females were radiomarked during winters 2010–2012 on the Duck River Unit of TNWR. Fourteen or 12 percent mortalities of radiomarked ducks were recorded during the study. Known-fate modeling in program MARK was used to estimate survival rates of radiomarked females in relation to biological and environmental variables. Effects of female age, weather, hunting period, or year were not detected on black duck survival. The top model indicated that the effect of body mass at capture on survival varied by year, having a positive effect on survival in winter 2010–2011 but a weak negative effect in winter 2011–2012. Survival rates were estimated for radiomarked black ducks of 0.852 in winter 2010–2011 and 0.843 in winter 2011–2012. In addition, 3,834 locations of black ducks were recorded during winters 2010–2011. Black duck habitat use was greatest in open water areas at 34.8 percent during daytime hours and emergent herbaceous wetlands 57.1 percent during nighttime hours. Data analyses on habitat selection are ongoing. Overall, winter survival rates were greater than estimates of black duck survival elsewhere in the Mississippi and Atlantic Flyways. Thus, winter survival of black ducks in this study does not appear to be related to the declining number of black ducks at TNWR.

Wintering waterfowl use of Delta National Forest, Mississippi

By Thomas G. Peterson, M.S. student



Bottomland hardwood forests once covered 25 million acres in the Mississippi Alluvial Valley (MAV). Today, only 25 percent of bottomland hardwood forests remain in the MAV. The second largest public holding of contiguous bottomland hardwood forest in the MAV is found in the Delta National Forest. With 60,000 acres, the forest is important to wildlife and the only bottomland hardwood forest managed by the U.S. Forest Service in the United States.

The U.S. Forest Service sought increased understanding of habitat use by wintering ducks at the Delta National Forest and specific management practices that would promote waterfowl use. A pilot study was initiated in winter 2011-2012 using ground surveys to determine waterfowl species composition and abundance on Delta National Forest wetlands. Specifically, Mississippi State scientists and graduate students examined waterfowl occupancy rates in relation to habitat composition such as available wetland area, resource pulses including landscape flooding, and human disturbance.

During the pilot study, scientists primarily observed four species of ducks: mallards, gadwall, wood duck, and hooded merganser. Flooding of hardwood bottoms in the Delta National Forest frequently resulted in significant influxes of mallards and other ducks. Such an episode was witnessed in late December 2011, when thousands of mallards and wood ducks used newly flooded red oak forest at the Delta National Forest.

In the second year of the study, 17 sets of surveys of 65 wetlands (1,105 total surveys) were conducted. Simultaneously, 9,269 ducks were counted from mid-November 2012 to 1 March 2013. Similar to the pilot study, wood ducks, mallards, gadwall, and hooded mergansers were primarily observed. Habitat composition was quantified within and around surveyed wetlands. These data are currently being analyzed to determine which ecological and human-related characteristics vary most with waterfowl occurrence and abundance.

Factors that influence wintering waterfowl use of the Delta National Forest are being examined and may serve as a baseline for future studies that incorporate experimental habitat manipulations. Ultimately, the objective is to better understand waterfowl use of bottomland hardwood forests like the Delta National Forest and recommend habitat management strategies that benefit mallards and other waterfowl throughout the MAV.

Annual ecology of mottled ducks in coastal South Carolina

By James Shipes, M.S. student

Mottled ducks are close relatives of mallards, however, they are only found in coastal and some interior regions of Florida, Alabama, Louisiana, Texas, and Mexico. Mottled ducks were captured and released on several state and privately owned lands in coastal South Carolina in the late 1970s. Despite apparent increases and the birds' popularity with hunters, little is known about ecology and habitat use of mottled ducks in South Carolina. Mississippi State scientists conducted a study to understand winter movements, habitat use, and breeding ecology of radio-marked mottled ducks in the Ashepoo, Combahee, and Edisto Rivers Basin (ACE Basin) of South Carolina.

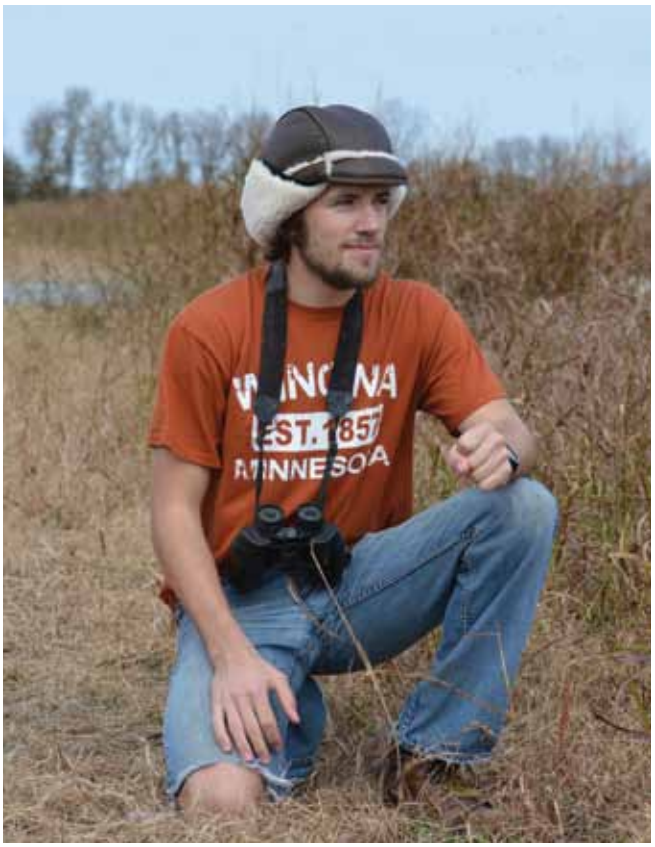
In August 2010 and 2011, 106 molting female mottled ducks were captured and radio-marked near Yemassee, South Carolina. Aerial reconnaissance was used to monitor and record movements and macro-habitat use by birds during fall-winter 2010 through 2012. Findings indicated that radio-marked female mottled ducks used managed wetland impoundments 95 percent more than unmanaged natural tidal marsh during fall-winter. Mottled ducks also used wetlands with natural vegetation 94 percent more than habitats planted with agricultural crops. Estimated average home range size of radio-marked female mottled ducks from fall-spring encompassed approximately 6,000 ha, and only two birds were located outside of the ACE Basin.

The original objective was to track radio-marked females from winter through the spring nesting season; however, significant transmitter failure or unidentified predation of females in winter 2010-2011 greatly reduced the sample of radio-marked birds. In spring 2012, nine mottled ducks that retained functional transmitters were studied. Of the nine radio-marked females, only three nests were located with two lost to predators and one abandoned. An intensive search of nesting unmarked females was conducted to increase sample size. Forty-two nests were discovered.

Data from the 42 nests of unmarked females was analyzed. Sixty-four percent of the nests were on islands of emergent vegetation. Mean clutch size was 8.4 eggs and overall apparent nest success was 19 percent. Scientists modeled 14 hen- and environmentally-related covariates hypothesized to influence nest success. The most important covariate influencing nest success was area of nesting islands. Mottled ducks that nested on islands with an area over 10 m^2 had apparent nest success of 70 percent compared to 12 percent for those that nested on islands less than 10 m^2. Fifteen females nested on levees of wetland impoundments, where their apparent nest success was 20 percent, slightly greater than for females nesting on small islands. Preliminary results suggest that island size contributes significantly to nest success of mottled ducks in the ACE Basin.

Waterbird and seed abundances in migratory bird habitat initiative and non-managed wetlands in Mississippi and Louisiana

By Matthew W. Weegman, M.S. student



The USDA Natural Resources Conservation Service (NRCS) implemented the Migratory Bird Habitat Initiative (MBHI) in summer 2010 to provide wetlands for waterbirds inland from the Deepwater Horizon Oil Spill. To evaluate MBHI and associated wetland management practices, scientists estimated seed and waterbird densities in locally paired MBHI managed and non-managed wetlands in the Mississippi Alluvial Valley (MAV) of Mississippi and Louisiana. Although not statistically different, wetlands enrolled in MBHI contained more total seed biomass and seeds consumed by waterfowl than non-managed wetlands. Three times more dabbling ducks and all ducks combined were detected on MBHI wetlands compared to non-managed wetlands. When density data for all waterbird species were combined, MBHI wetlands contained over two times more birds than non-managed wetlands. Management via MBHI increased waterbird and potential food abundances. The results suggest that NRCS consider sustaining MBHI and provide financial incentives to landowners for management of wetlands in the MAV and United States serve as a baseline for future studies that incorporate experimental habitat manipulations. Ultimately, the objective is to better understand waterfowl use of bottomland hardwood forests like the Delta National Forest and recommend habitat management strategies that benefit mallards and other waterfowl throughout the MAV.

AWARDS

MSU waterfowl and wetlands program

The MSU waterfowl and wetlands program received a national award, The Blue-winged Teal Award, from the U.S. Fish and Wildlife Service for the group's decades of applied research and other contributions to waterfowl and wetlands in North America.

Amy Alford

Kennedy Chair doctoral fellowship for academic year 2013-2014

First Place Award, Student Oral Presentation for Alford, A. B., R.M. Kaminski. 2013. Crayfish harvesting: Alternative opportunities for landowners practicing moist-soil management. Mississippi Water Resources and Research Institution conference, Jackson, MS.

Justyn Foth

Best poster award for Foth, J.R., F.J. Vilella, R.M. Kaminski. 2013. Shore- and waterbird use of wetlands and aquaculture ponds in the Mississippi Alluvial Valley and Gulf Coast regions. Mississippi Chapter of The Wildlife Society, Jackson, Mississippi.

Thomas A. Plein Foundation Scholarship in the College of Forest Resources

Rick Kaminski

Clarence W. Watson Award for distinguished contributions in ecology and management of waterfowl and wetlands in North America. Presented by the Southeastern Association of Fish and Wildlife Agencies, Southeastern Section of The Wildlife Society, and Southern Division of the American Fisheries Society.

Alan Leach

Second Place Award, Best Doctoral Student Poster Presentation, 6th North American Duck Symposium for Leach, A. G., J. N. Straub, R. M. Kaminski, A. W. Ezell, T. S. Hawkins, and T. D. Leininger. 2013. Greentree reservoir management and red oak acorn yield in Mississippi.

Joe Marty

Scholarship, Wisconsin Waterfowl Hunters' Association

Kira Newcomb

Second Place Award, Best Master's Student Oral Presentation, 6th North American Duck Symposium for Newcomb, K. C., J. B. Davis, M. J. Gray, and R. M. Kaminski. 2013. Winter survival and habitat use of female American black ducks in western Tennessee.

Thomas Peterson

First-Place Student Poster, 60th Annual Southern Hardwood Forest Research Group Meeting for Peterson, T. G., J. B. Davis, R. M. Kaminski, J. A. Martin, and M. S. Whittington. 2013. Wintering waterfowl use of Delta National Forest, Mississippi.

PRESENTATIONS

Alford, A. B. 2013. Crayfish harvesting: Alternative opportunities for landowners practicing moist-soil management. Mississippi Water Resources and Research Institution conference, Jackson, MS.

Alford, A.B., R. Kroger, and R.M. Kaminski. 2013. Water quality from moist-soil wetlands in agricultural landscapes: A comparative assessment. 6th North American Duck Symposium and Ecology and Conservation of North American Waterfowl. Memphis, TN.

Alford, A.B., S. Grado, R.M. Kaminski, L. D'Abramo, and J. Avery. 2013. Crayfish harvesting: Alternative opportunities for landowners practicing moist-soil wetland management. 6th North American Duck Symposium and Ecology and Conservation of North American Waterfowl. Memphis, TN.

Davis, J. B., M. Guillemain, R. M. Kaminski, J. M. Eadie, and C. Arzel. 2013. Fall migration and winter. Plenary presentation, North American Duck Symposium and Workshop; Ecology and Conservation of North American Waterfowl, Memphis, TN.

Feaga, J.S. 2013.The effects of weirs on macroinvertebrate communities in agricultural drainage ditches of the Mississippi Delta. Mississippi Water Resources and Research Institution conference, Jackson, MS.

Feaga, J.S., F. Vilella, B. Davis, and R. M. Kaminski. 2013. Winter waterfowl use and food resources of aquaculture facilities in Mississippi. Poster Presentation. 6th North American Duck Symposium / Ecology and Conservation of North American Waterfowl, Memphis, TN.

Foth, J.R. F.J.Vilella, and R.M. Kaminski. 2013. Shore- and waterbird use of wetlands and aquaculture ponds in the Mississippi Alluvial Valley and Gulf Coast regions. 6th North American Duck Symposium and Workshop-Ecology and Conservation of North American Waterfowl, Memphis, TN.

Foth, J.R., F.J. Vilella, R.M. Kaminski. 2013. Shore- and waterbird use of wetlands and aquaculture ponds in the Mississippi Alluvial Valley and Gulf Coast regions. Mississippi Chapter of The Wildlife Society, Jackson, MS.

Foth, J.R., R.M Kaminski, J.N. Straub, J.B. Davis, T.D. Leininger, E.D. Dibble, and R. Kroger. 2013. Winter aquatic invertebrate communities in Mississippi River Alluvial Valley forested wetlands. 6th North American Duck Symposium / Ecology and Conservation of North American Waterfowl, Memphis, TN.

Hagy, H.M., J. D. Stafford, M. L. Schummer, A. T. Pearse, J. N. Straub, and R. M. Kaminski. 2013. Practical application of and potential bias associated with foraging thresholds in estimates of carrying capacity for waterfowl. North American Duck Symposium-Ecology and Conservation of North American Waterfowl, Memphis, TN.

PRESENTATIONS

Hagy, H.M., J.N. Straub, R.M. Kaminski, and M.L. Schummer. 2013. Effects of annual variation on carrying capacity models for waterfowl: Case studies in moist-soil and bottomland hardwood wetlands. North American Duck Symposium-Ecology and Conservation of North American Waterfowl, Memphis, TN.

Kaminski, R. M. 2013. Evaluation of NRCS's Migratory Bird Habitat Initiative. North American Wildlife and Natural Resources Conference, Washington, DC.

Kaminski, R. M. 2013. Moist-soil management adapted for the State of Michigan. Invited webinar presentation, Michigan Department of Natural Resources and U.S. Fish and Wildlife Service, Shiawassee National Wildlife Refuge, St. Charles, MI.

Kaminski, R. M. 2013. Ecological assessment of USDA NRCS's Migratory Bird Habitat Initiative. Invited presentation to Society of Wetlands Scientists annual meeting, Starkville, MS.

Kaminski, R.M. 2013. Evaluation of NRCS's Migratory Bird Habitat Initiative. Mississippi Water Resources and Research Institution conference, Jackson, MS.

Kaminski, R.M. 2013. Phase I, NRCS's Migratory Bird Habitat Initiative. Invited presentation to University of Tennessee students, Mississippi State University.

Kneece, M.R., J.B. Davis, W.E. Mills, E.P. Wiggers, and R.M. Kaminski. 2013. Habitat Use of Mottled Duck Broods in ACE Basin, South Carolina. Poster Presentation. Friends of Nemours, Yemassee, SC.

Kneece, M.R., J.B. Davis, W.E. Mills, E.P. Wiggers, and R.M. Kaminski. 2013. Habitat Use of Mottled Duck Broods in ACE Basin, South Carolina. Poster Presentation. Society of Wetland Scientists-South Central Chapter Fall Meeting, Starkville, MS.

Lancaster J. D., J. B. Davis, R. M. Kaminski, A. D. Afton, E. J. Penny. 2013. Survival and Habitat Selection of Female Mallards in Mississippi. 6th North American Duck Symposium and Workshop. Memphis, TN.

Lancaster J. D., J. B. Davis, R. M. Kaminski, A. D. Afton, E. J. Penny. 2013. Winter survival, habitat selection, and patters of WMA use by female mallards in Mississippi. Mississippi Department of Wildlife, Fisheries, and Parks Annual Research Summit. Starkville, MS.

Leach, A. G., J. N. Straub, R. M. Kaminski, A. W. Ezell, T. S. Hawkins, and T. D. Leininger. 2013. Greentree reservoir management and red oak acorn yield in Mississippi. 6th North American Duck Symposium / Ecology and Conservation of North American Waterfowl, Memphis, TN.

Marty, J. R., J. B. Davis, R. M. Kaminski, M. G. Brasher, and G. Wang. 2013. Seed abundance and waterbird use of ricelands in Louisiana and Texas. Invited Presentation. Changing Academic Performance and Promoting Success Summer Jam Program, Louisville, MS.

PRESENTATIONS

Marty, J. R., J. B. Davis, R. M. Kaminski, M. G. Brasher, and G. Wang. 2013. Seed and waterbird abundance of ricelands in the Gulf Coast Prairies of Louisiana and Texas. Invited Presentation. University of Tennessee Wetland Ecology and Management Class. Starkville, MS.

Marty, J. R., J. B. Davis, R. M. Kaminski, M. G. Brasher, and G. Wang. 2013. Waste-rice and moist-soil seed abundance in rice production systems in Louisiana and Texas. 6th North American Duck Symposium / Ecology and Conservation of North American Waterfowl, Memphis, TN.

Marty, J. R., J. B. Davis, R. M. Kaminski, M. G. Brasher, and G. Wang. 2013. Waste-rice, moist-soil seed, and waterbird abundance in rice production systems in Louisiana and Texas. Poster Presentation. The LSU AgCenter Rice Research Station Field Day. Crowley, LA.

Marty, J. R., J. B. Davis, R. M. Kaminski, M. G. Brasher, and G. Wang. 2013. Waterbird response to the Migratory Bird Habitat Initiative in coastal Louisiana and Texas. 6th North American Duck Symposium / Ecology and Conservation of North American Waterfowl, Memphis, TN.

Newcomb, K. C., J. B. Davis, M. J. Gray, and R. M. Kaminski. 2013. Winter survival and habitat use of female American black ducks in western Tennessee. 6th North American Duck Symposium / Ecology and Conservation of North American Waterfowl, Memphis, TN.

Newcomb, K.C., J.B. Davis, M.J. Gray, R.M. Kaminski. 2013. Survival and Habitat Selection of Female American Black Ducks in Tennessee. Oral presentation given at the South Central Chapter of the Society for Wetland Scientists' Fall Meeting. Starkville, MS.

Peterson, T. G., J. B. Davis, R. M. Kaminski, J. A. Martin, and M. S. Whittington. 2013. Wintering waterfowl use of Delta National Forest, Mississippi. Poster Presentation. 6th North American Duck Symposium / Ecology and Conservation of North American Waterfowl, Memphis, TN.

Peterson, T. G., J. B. Davis, R. M. Kaminski, J. A. Martin, and M. S. Whittington. 2013. Wintering waterfowl use of Delta National Forest, Mississippi. Poster Presentation. The 60th Annual Southern Hardwood Forest Research Group Meeting, Stoneville, MS.

Schummer, M. L. and R. M. Kaminski. 2013. Pitfalls and progress toward quantifying changes in climate-related waterfowl migration patterns in North America. 6th North American Duck Symposium, Memphis, TN.

Shipes, J. C., J. B. Davis, E. P. Wiggers, M. R. Kneece, and R. M. Kaminski. 2013. Mottled duck research in South Carolina. Oral presentation to the Atlantic Flyway Council's Migratory Game Bird technical Section, Mystic, CT.

PRESENTATIONS

Shipes, J. C., J. B. Davis, E. P. Wiggers, M. R. Kneece, and R. M. Kaminski. 2013. Ecology of mottled ducks in coastal South Carolina. Oral Presentation, 67th Southeastern Association of Fish and Wildlife Agencies, Oklahoma City, OK.

Shipes, J. C., J. B. Davis, E. P. Wiggers, R. M. Kaminski. 2013. Ecology of mottled ducks in coastal South Carolina. Poster Presentation. 6th North American Duck Symposium / Ecology and Conservation of North American Waterfowl, Memphis, TN.

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